

Inventors: Haw Jye Shyu
Serial Number

PATENT APPLICATION
Navy Case No. 95,756

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Please cancel claims 1-11 from 09/477,811

Please add claims 12-22.

12. (previously presented) A system for tracking multiple targets using distributed linear sensor arrays, comprising:

- a plurality of arrays of sensors for receiving signals from a target;
- a receiver for receiving signals received by the plurality of sensor arrays;
- an analog/digital converter for converting the signals received from the sensor arrays to a digital format, if signals are received in an analog format;
- a digital storage device for storing the digitized data from the sensor arrays; and
- a computer system for retrieving the stored digitized data from the plurality of sensor arrays and processing the data through the use of a composite Hough transform to determine a track of the target.

13. (previously presented) A system for tracking multiple targets using distributed linear sensor arrays, comprising:

- one or more arrays of sensors for receiving signals from a target;

means for receiving signals received by the plurality of sensor arrays;

means for converting the signals received from the sensor arrays to a digital format, if required;

means for storing the digitized data from the sensor arrays; and

a computer system for retrieving the stored digitized data from the sensor arrays and processing the data through the use of a composite Hough transform to determine a track of the target.

14. (previously presented) A system, as in Claim 13, wherein the sensors for receiving signals from a target are acoustic sensors.

15. (previously presented) A system, as in Claim 13, wherein the sensors for receiving signals from a target are electromagnetic sensors.

16. (previously presented) A system, as in Claim 13, wherein the sensors for receiving signals from a target are optic sensors.

17. (previously presented) A system, as in Claim 13, wherein the receiver is an acoustic receiver.

Inventors: Haw Jye Shyu
Serial Number

PATENT APPLICATION
Navy Case No. 95,756

18. (previously presented) A system, as in Claim 13, wherein the receiver is an sonar signal receiver.

19. (previously presented) A system, as in Claim 13, wherein the means for converting the signals received from the sensor arrays to a digital format, if required, is an analog-to-digital converter.

20. (previously presented) A system, as in Claim 13, wherein the means for storing the digitized data from the sensor arrays is a computer.

21. (previously presented) A computer system for processing digitized data to determine the track of a target comprising;

a data storage device;

a computer for retrieving data from the data storage device, computing a hypothesis reference track relative to a primary sensor array; and for computing a hypothesis reference track relative to the second sensor array;

said computer calculating an associated delay curve in a primary correlogram for the primary sensor array;

said computer calculating an associated delay curve in a secondary correlogram
for a secondary array;

said computer accumulating data for the reference track by simultaneously
integrating a series of pixel values along the appropriate delay curve in the primary and
secondary correlograms;

said computer storing the accumulated pixel values in composite Hough space;
and thresholding the accumulated pixel values to detect the track.

22. (previously presented) A computer system for processing digitized data to determine the
track of a target comprising;

a data storage device; and

a computer for retrieving data from the data storage device and

hypothesizing a track with track parameters values (θ_1 , v , D , t_{01});

generating a corresponding template delay curve in a primary correlogram;

performing integration along the template delay curve in the primary correlogram;

computing a delay curve parameter (θ_2 , v/D , t_{02}) for a secondary array based on
geometric constraints;

generating a corresponding template delay curve in a secondary correlogram based
on the delay curve parameter (θ_2 , v/D , t_{02});

Inventors: Haw Jye Shyu
Serial Number

PATENT APPLICATION
Navy Case No. 95,756

performing integration along the template delay curve in the secondary correlogram and storing integrated values;

computing a delay curve parameter (θ_{2m} , v/D_{2m} , t_{02m}) for the secondary array based on geometric constraints;

generating a corresponding template delay curve in the secondary correlogram;

combining the integrated values and storing it in the corresponding composite Hough space; and

thresholding the accumulated pixel values to detect the track.